

Claim Amendments

Amend the claims to read as follows:

1. (canceled)

2. (previously presented) The method of claim 9 in which the membrane support is a single monolith.

3. (previously presented) The method of claim 9 in which the membrane support is a plurality of monolith segments.

4. (canceled).

5. (previously presented) The method of claim 9 in which the permeate channels are slots at the end faces of the monolith and are sealed to isolate the permeate chambers from feed and retentate.

6. (previously presented) The method of claim 9 further comprising channels which communicate with an annular space between the membrane element and the housing, at least one channel in fluid communication with the inlet port and at least one channel in fluid communication with the outlet port.

7. (previously presented) The method of claim 9 in which the inlet and outlet sweep fluid ports communicate with ducts at the feed end face and the retentate end face of the monolith.

8. (canceled)

9. (currently amended) A method of separating a feedstock into a retentate and a gas-phase permeate, comprising:

a) providing a membrane element that receives the feedstock at a feed end face, and separates the feedstock into a gas-phase permeate and retentate, the membrane element comprising:

- i) a membrane support containing at least one monolith of porous material defining a plurality of passageways with passageway wall surfaces, the passageways extending longitudinally from the feed end face of the monolith to a retentate end face of the monolith;
- ii) a permselective membrane coating applied to the passageway wall surfaces of at least the channels through which the feedstock flows; and
- iii) at least one permeate conduit formed within the monolith, the conduit containing a plurality of longitudinal permeate chambers extending substantially the entire length of the monolith, transected close to the feed end face by at least one permeate channel that are proximate the feed end face and close to the retentate end face by at least one permeate channel of the monolith;

b) providing a housing assembly to contain the membrane element, the assembly comprising:

- i) a means to contain the element;
- ii) a feedstock inlet port in communication with the feed end face of the monolith, and a retentate outlet port in communication with the retentate end face of the monolith;
- iii) a sweep fluid inlet port in fluid communication with the permeate channel or channel~~se~~ondu~~it~~ proximate one end face of the monolith, to allow for the introduction of a permeate sweep fluid into the permeate conduit~~chambers and flow of the sweep through substantially the entire length of the chambers;~~
- iv) a sweep fluid and permeate outlet port in fluid communication with the permeate channel or channel~~se~~ondu~~it~~ proximate the other end face of the monolith, to allow for the withdrawal of the sweep fluid and permeate from the permeate conduit; and

v) a means of separating the sweep fluid and gas-phase permeate flows from the feed and retentate flows; and

c) introducing a feedstock and withdrawing retentate while circulating a sweep fluid into the sweep fluid inlet port, through the conduit, and out the sweep fluid outlet port, to facilitate transfer of the permeate from the passageways through which the feedstock flows into the permeate chambers.

10. (currently amended) The method of claim 91 in which the sweep fluid inlet port is proximate the monolith retentate end face to accomplish countercurrent feedstock and sweep fluid flows.

11. (currently amended) The method of claim 94 in which the sweep fluid inlet port is proximate the monolith feed end face to accomplish co-current feedstock and sweep fluid flows.